Newsbriefs

MATERIALS/PRODUCTS

Rhone-Poulenc Inc., Cranbury, New Jersey, has developed a ***resin additive which not only relieves coating surface imperfections, but also cures into the principle film formers.*** The new additive, CMD 9017, reduces pinholes, craters, solvent popping, and "orange peel" in polyesters, acrylics, and other thermoset vehicles. In addition, it exhibits excellent pigment wetting properties when used alone or as part of the grinding vehicle.

Circle No. 6 on reader service card.

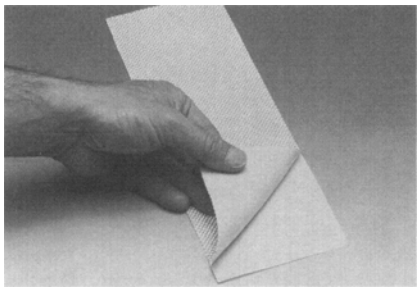
A high-purity crosslinker, MHOROMER® MRM-416 Ethylene Glycol Dimethacrylate EGDMA, forms strong, clear films, according to **Rohm Tech Inc.,** Malden, Massachusetts. MFM-16 is easily pourable and mixable, and does not polymerize easily during storage. It forms a clear film with very good color that does not yellow over time, and has the highest purity of its kind on the market due to the manufacturing process which results in a very low acid and water content. Providing a high solubility and membrane durability, it is ***suitable for a variety of applications requiring strong, durable bonds that are impermeable to water such as plastisols, metal impregnation to adhesives and dielectric paper coatings.***

Circle No. 7 on reader service card.

Two polyether-based thermoplastic polyurethane resins for potential applications in fire hoses and other markets, such as film, seals and gaskets, tubing, cable jackets, extruded profiles, hose jackets and applications needing improved release in difficult molding operations have been introduced by **Miles Inc.,** Pittsburgh, Pennsylvania. They exhibit excellent antiblocking properties and compatibility with both extrusion and injection molding techniques. The formulation of the new Texin resins includes a special release package, so that blockage or sticking is reduced, as well as very long lifespans.

Circle No. 8 on reader service card.

Automotive design engineers can use lighter steel and achieve superior read-through properties by specifying BETABRACE® 85076, a new expandable sheet-metal reinforcing material from

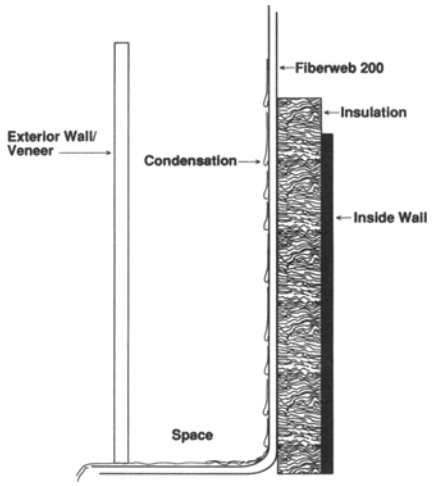


Essex Specialty Products, Inc.

Essex Specialty Products, Inc., Troy, Michigan. BETABRACE 85076 features an expansion agent that, during the E-coat process, ***increases the product's original volume sixty-fold and produces an 80 percent increase in applied thickness.*** It can be applied manually or robotically, and is manufactured as a laminate of thermoset polymer and fiberglass with a protective release paper. Material properties are available for finite element analysis.

Circle No. 9 on reader service card.

Fiberweb International Corp., Cambridge, Massachusetts, offers Fiberweb 200, ***a long-lasting, lightweight and durable fabric flashing that creates a permanent moisture barrier.*** Ideal for use in highly insulated veneer wall systems which tend to cause accelerated corrosion of masonry ties and metal stud systems, the flashing resists the caustics and alkalies found in concrete and mortar and ensures positive weeps for proper condensation. Fiberweb 200 is constructed of a 1.5 mil polyester film bonded to a 20 × 10 fiberglass scrim for additional reinforcement during installation, and is coated with a black vinyl acetate film. It is impervious to degradation under most conditions and will not shrink, sag, or delaminate and is estimated to retain its properties for at least 100 years.



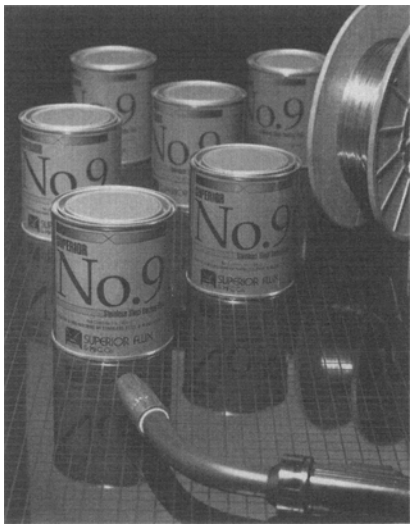
Fiberweb International Corp.

Circle No. 10 on reader service card.

A new solvent, Dynasolve 165, is now offered by **Dynaloy, Inc.,** Hanover, New Jersey, for use in dissolving cast epoxy resins. Dynasolve 165 is a ***powerful blend of solvents and organic chemicals that is designed to disintegrate most room temperature-cured or heat-cured cast epoxy systems at room temperature.*** It will not attack transfer-molded or novolac epoxies, which are commonly used for encapsulation of integrated circuits. It is non-flammable and may also be used for decomposing urethanes.

Circle No. 11 on reader service card.

A backup flux specifically formulated to improve welds on stainless steel is now available from **The Superior Flux & Mfg.**



The Superior Flux & Mfg. Co.

Co., Cleveland, Ohio. Superior No. 9 is a powder backup flux for TIG and MIG welding of stainless steel and low-nickel, heat-resistant alloys. The flux ***prevents oxide inclusion formation, while protecting the backside of welds from oxidation.*** It is more cost-effective than other backup methods, such as backup bars, inert gas purges, and backup tapes. In addition, it can be applied to irregular shapes, where backup bars or tapes are not practical. No. 9 sweeps away contaminants, improves weld penetration, supports the molten weld pool, reduces burn-through, and helps eliminate weld porosity.

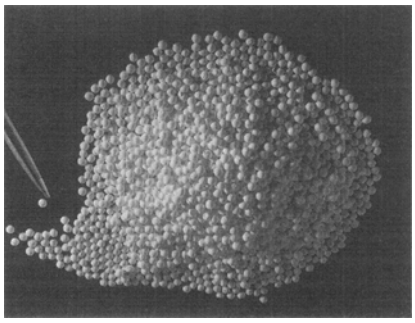
Circle No. 12 on reader service card.

Grace Construction Products, Cambridge, Massachusetts, has introduced two mid-range water-reducers, Daracem® 50 and Daracem® 55, which greatly ***enhance concrete finishability, set performance, durability and strength character- istics.*** Both admixtures offer virtually identical performance with emphasis on improved finishability, and set control, even in lean mixes.

Machine or hand-finishing of the admixtured concrete imparts a smooth, close-tolerance surface with less time and labor. In all ready-mix, job site and concrete product plant applications, the admixtures also produce stronger, less permeable, more durable concrete. They are especially effective in lean or flyash and slag-compensated mixes, and improve the surface characteristics of concretes in precast and slip form applications.

Circle No. 13 on reader service card.

Zircar Products, Inc., Florida, New York, announces the expansion of its alumina line of products by offering a new specialty product, "Bubble Alumina." It is a ***rigid, low density insulating refractory which is comprised of Zircar Insulating Bubble and a refractory cement.*** Insulating bubble is a class of material comprised of hollow thin wall ceramic spheres that are employed in many high-temperature applications where insulating capabilities cannot be sacrified. Bubble Alumina is prefired and contains no organics. Its high alumina content makes it compatible with many extreme chemical environments. Successful applications where high strength and low thermal conductivity are required include hot face refractory in high-temperature furnaces, low mass kiln furniture, radiant burners and high-temperature load bearing insulation. It is supplied as a custom product in many complex geometries without significant size restrictions.



Zircar Products, Inc.

Circle No. 14 on reader service card.

Pebax® X1283 SN 00 (X1283) resin, a ***new grade of polyamide-based thermoplastic elastomer,*** is now available for sampling from **Elf Atochem North America, Inc.,** Philadelphia, Pennsylvania. The X1283 grade possesses the unique combination of properties of all Pebax TPE grades: high strength, good impact strength at low temperature, and inherent compatibility with other polymers. Distinguished by its softness, the X1283 grade has a flexural modulus of 1,500 psi, tensile strength of 2,310 psi, and a shore hardness of 70 A. Noted for its design flexibility, and ease in standard processing techniques for converting thermoplastics, this particular grade is suitable for industrial uses, notably in the high performance sporting gear market.

Circle No. 15 on reader service card.

B'laster PB Penetrating Catalyst is a highly concentrated penetrant from **Wm. K. Westley Co.,** Garfield Heights, Ohio, that ***works by breaking the surface tension of rust and carbon to quickly and easily free stubborn rusted or immobilized parts.*** When sprayed on a part, the penetrant magnetically creeps up, around and into all of the part's tight, hard-to-reach cavities—even the most inaccessible areas. After breaking loose the surface tension, the penetrant converts into a non-evaporating lubricating film which prevents rust on the part.

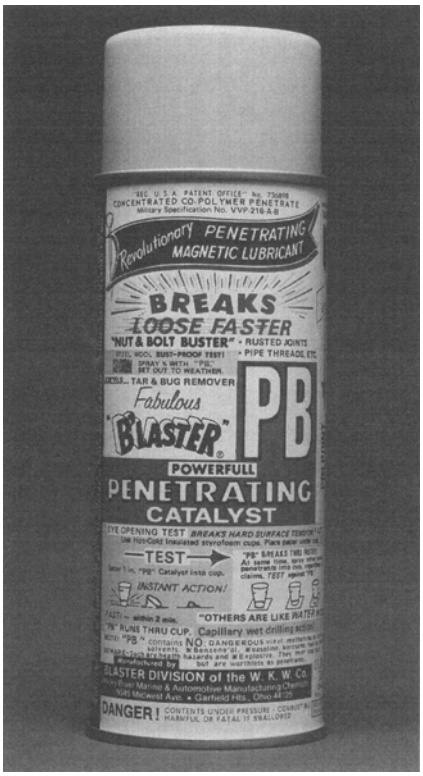
Circle No. 16 on reader service card.

A new two-component epoxy compound for potting, casting, encapsulation and sealing up to 500 °F service has been developed by **Master Bond Inc.,** Hackensack, New Jersey. EP101HTAO ***epoxy resin compound is comprised of a specially developed heat-resistant liquid epoxy resin and a unique curing agent which exhibits unexcelled thermal stability.*** Unlike many other high temperature resistant curing agents it presents minimal toxicological hazards during handling. It exhibits a long pot life at ambient temperatures and is readily cured at temperatures ranging from – 275 °F to + 400 °F. After cure, it has a thermal conductivity in the order of 11 Btu/hr/fr(2)/in./ °F, as well as excellent mechanical strength properties, superior electrical insulation characteristics and outstanding thermal stability. Shrinkage is negligible, thus assuring an order of dimensional stability. It has been widely accepted in the electrical/electronic and related industries wherever a high degree of heat dissipation from active power components is desirable.

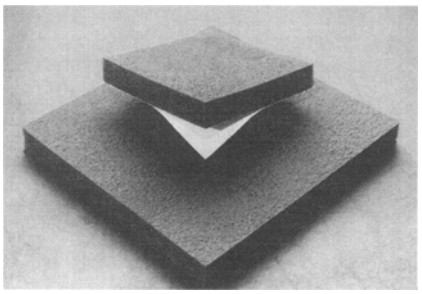
Circle No. 17 on reader service card.

Fina Oil and Chemical Co., Dallas, Texas, announces its ***latest innovation in clear styrene-butadiene copolymer technology, Finaclear 530.*** Developed specifically for the most demanding processing methods: injection molding, blow molding and thin-sheet extrusion of 15 mils or less, Finaclear 530 is distinguished by a sparkling clarity, an extremely low gel count, and a higher melt flow (11-ASTM1 1238 Cond. G) than others.

Circle No. 18 on reader service card.



Wm. K. Westley Co.



Polymer Technologies Inc.

The Polydamp™ Foam product line of **Polymer Technologies Inc.,** Newark, Delware, is now available with ***densified surface-faced foams in both polyester and polyether grade urethane.*** Densification of the foam's surface gives it rapid wicking properties, making it suitable for medical applications and as a reusable absorber for industrial or environmental spills. It also provides higher tensile and tear strength, abrasion resistance, and a lower coefficient of friction. Acoustical foams with densified surfaces exhibit superior sound absorption through the mid-frequency range, and can be supplied with an optional pressure sensitive adhesive backing or skinning on both sides for liquid retention applications.

Circle No. 19 on reader service card.

DSM Resins, Zwolle, The Netherlands, has developed ***a new generation of binders, which can be used to make paints with an organic-solvent content of less than two percent.*** These paints are alkyd-resin emulsions which can be thinned using water, reducing VOC emissions. They have the same quality as traditional paint based on alkyd resins containing organic solvents.

Circle No. 20 on reader service card.

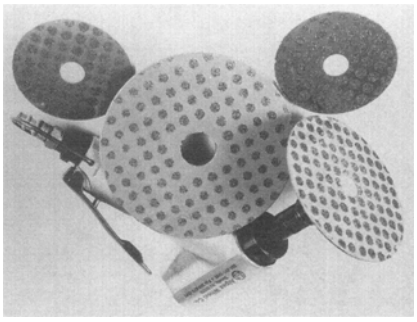
EMS-American Grilon, Inc., Sumter, South Carolina, has added another resin formulation to its Grilesta® family of outdoor-durable polyester powder coating resins. Grilesta V 76-17 is designed for bloom-free performance when cured with Rohm and Haas Primid XL-552 at temperatures as low as 150 °C. This saturated, ***carboxyl-functional polyester resin is free of trimellitic anhydride (TMA), and offers excellent flow and degassing properties.*** Film thicknesses up to 4 mils (100 microns) are possible using standard formulating techniques. Powder coatings produced from Grilesta V 76-17 can be applied via tribo or conventional electrostatic spray gun systems.

Circle No. 21 on reader service card.

EMS-American Grilon, Inc.

PROCESSING/EQUIPMENT

Alpex Wheel Co., Tenafly, New Jersey, has introduced a comprehensive line of ***diamond-plated discs for rapid stock removal*** of carbon, graphite, space-age composites and non-metallics, laminates, fiberglass and graphite reinforced composites.

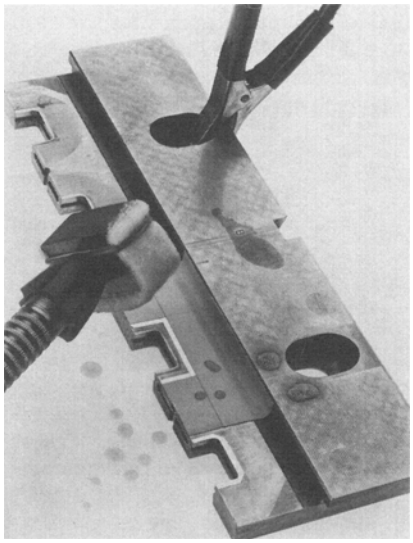


Alpex Wheel Co.

Circle No. 22 on reader service card.

The Solderposit Immersion Tin/Lead Process from **Shipley Co., Inc.,** Newton, Massachusetts, is an ***entirely new method for selectively plating a uniform tin/lead deposit on copper areas.*** The unique process ensures excellent results and offers major production benefits for fine pitch surface mount and high density applications requiring a flat uniform, solderable tin/lead deposit. It also offers excellent thickness control capabilities and planarity of the deposit.

Circle No. 23 on reader service card.

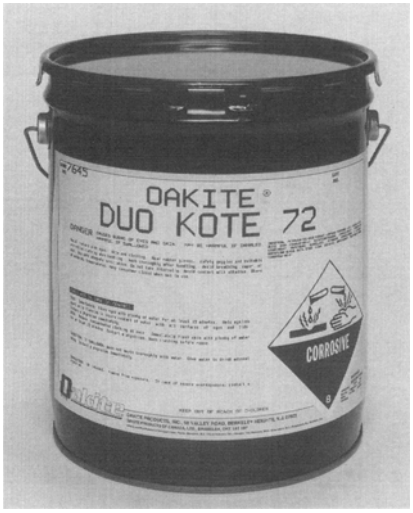


Selectrons, Ltd.

Selectrons, Ltd., Waterbury, Connecticut, offers ***electrochemical metallizing, a precision, selective metal put-on tool for applying decorative and cosmetic coatings*** to many industrial and commercial items. Practically any desired metal can be deposited in thicknesses that can be controlled within ten percent. Adhesion is excellent. Coatings are applied only to the area where the anode/stylus tool contacts the part. Surfaces up to as large as one square foot can be metallized at one time. Deposits are localized, and masking is often not necessary.

Circle 24 on reader service card.

For stamping, drawing, cold extrusion and other metalworking operations where severe metal deformation is required, **Oakite Products,** Berkeley Heights, New Jersey, offers ***a double-action fluid that both chemically coats the metal and bonds an organic lubricant to the metal surface.*** Identified as Duo Kote 72™, it provides maximum lubrication on carbon and low alloy steels. When the fluid is applied to the metal surface, a phosphate coating is chemically bonded to the metal, providing separation between the die and the workpiece. Simultaneously, an organic lubricant is bonded to the phosphate. It is not recommended for aluminum, copper, cuprous alloys, zinc and other non-ferrous



Oakite Products

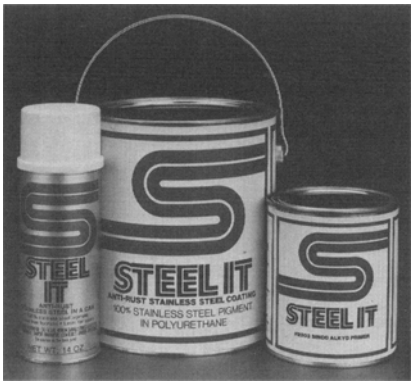
metals, nor for stainless steel, as it does not react.

Circle No. 25 on reader service card.

The ENPREP™ APC ***advanced process controller for electroplating pre- and post-treatment processes*** has been introduced by **Enthone-OMI Inc.,** West Haven, Connecticut. It is an economical controller for soak, electro-cleaners, electroplating solutions and chromate coatings. The system is able to continuously analyze multiple plating solution variables for conductivity, pH and temperature. Process solution replenishment is automatic, so chemistry is restored and maintained at optimum conditions. The tight control of the plating solutions improves process operation, maintains deposit consistency and reduces solution maintenance. These benefits can improve shop productivity while reducing chemical consumption and overall operating costs.

Enthone-OMI Inc.

Circle No. 26 on reader service card.

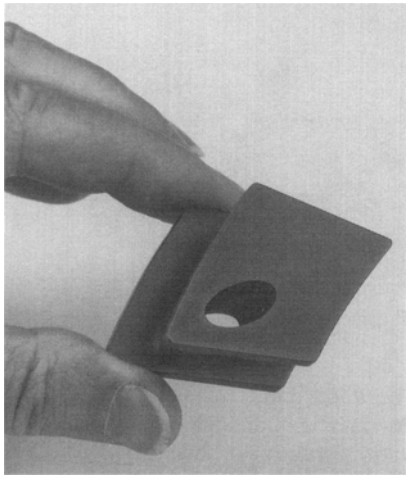


Stainless Steel Coatings, Inc.

The Steel It Polyurethane Coating System from **Stainless Steel Coatings, Inc.,** South Lancaster, Massachusetts, ***features a unique stainless steel leafing pigment, and provides optimum weather-, abrasion-, and corrosion-resistance in general maintenance applications.*** The easy-to-apply system yields a hard, nontoxic, metallic finish that protects a multitude of metallic and non-metallic surfaces from ultraviolet rays, chemicals, oils, alkalis, food acids, water immersion, abrasion, and high-pressure washdowns. The system adheres tightly, and is ideal for protecting structural steel and other metals. The single component coatings require no complicated mixing. Applied as they come from the can, they are dried and require no baking or heating.

Circle No. 27 on reader service card.

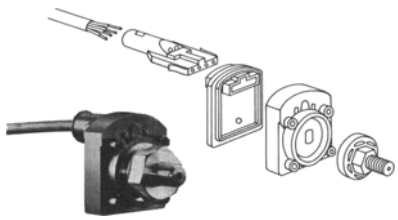
Obtaining the performance benefits of components produced from ceramic materials is often dependent on the ability to accurately machine the part surfaces to, very tight tolerances. **Eonic Inc.,** Detroit, Michigan, has been able to ***utilize the extensive know-how of the aerospace industry in cam and contour machining to successfully produce very difficult-to-machine ceramic gas turbine engine components.*** In one example, a silicon nitride gas turbine engine nozzle is ground on every surface of the nozzle, including the internal profile, with CNC and specially designed Eonic-built grinding equipment.



Eonic Inc.

Circle No. 28 on reader service card.

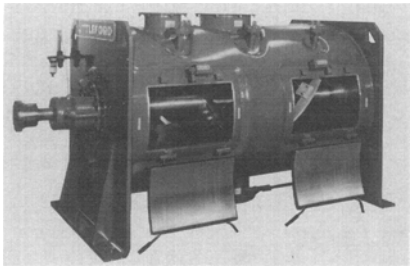
Plastic Molding Technology, Seymour, Connecticut, has designed and engineered yet another "special insert molding." That is, it was created and developed around a customer's specific requirements. PMT's ***semi-automatic insert molding process is engineered to load miniature inserts into precise locations within the mold in just a few seconds.*** The finished assembly can be molded within the normal cure cycle of the material used. Thus, the insert molding can be accomplished within the same time frame required to mold the part without the inserts. And, the inserts are all positioned precisely in location, load after load, reducing or eliminating costly secondary processing and re-inspection.



Plastic Molding Technology

Circle No. 29 on reader service card.

The FKM Series ***batch mixer with unique plow-shaped mixing elements*** from **Littleford Bros., Inc.,** Florence, Kentucky, is used to mix coke, carbon, or graphite with a pitch binder to form a uniform granulate suitable for molding. It is designed to per-

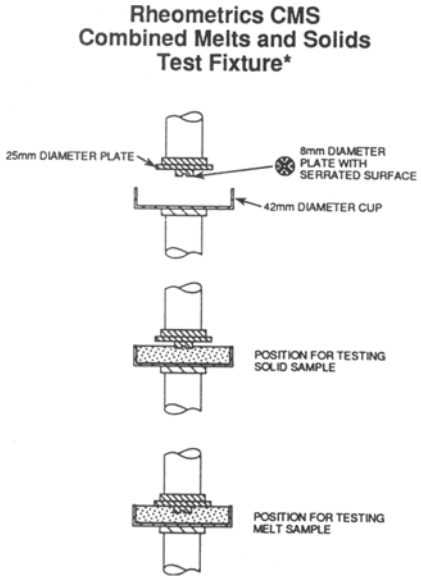


Littleford Bros., Inc.

form in difficult mixing environments. A fluidized mixing action results in a homogeneous mix in a fraction of the time required in conventional mixers. In the process, the carbon can be mixed with liquid pitch or ground solid pitch.

Circle No. 30 on reader service card.

Rheometrics, Inc., Piscataway, New Jersey, has developed an exclusive testing capability that enables users to ***run continuous rheological tests on a single sample in both the melt and solid form***



Rheometrics, Inc.

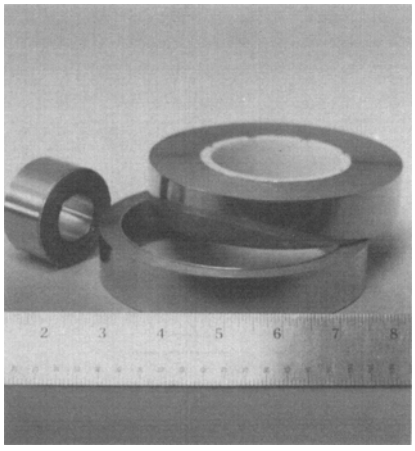
without having to change samples and sample holders. Although originally developed for asphalt testing, this capability is broadly applicable to testing other meltable solid materials, such as some thermoplastic polymers, waxes, hot melt adhesives, and foods. Tests can be done automatically, at the appropriate time and sample temperature—even overnight for added productivity—to provide a continuous set of data on both solid and melt throughout the transition, without operator attention.

Circle No. 31 on reader service card.

A wide variety of shapes and sizes of cores for the pulse power industry is now available from **Allied-Signal Inc.,** Parsippany, New Jersey. The cores can be fabricated in standard toroidal and racetrack shapes, or custom-designed to the specifications of a pulse power system—in sizes ranging from less than one gram to over 300 kilograms. Using rapidly solidified Metglas® amorphous alloys, the cores—used in pulse transformers, switch protection inductors and magnetic pulse compression inductors—optimize pulse power systems by allowing increased repetition rate, thus enabling greater output power and extending system lifetime.

Circle No. 32 on reader service card.

A full line of horizontal continuous casting machines that permit scrap reprocessing in-house for users who produce at least two million pounds per year is being introduced by **Rautomead USA,** Bristol, Rhode Island. The RT and RX Series horizontal continous casting machines feature all graphite die and crucible systems and are capable of reprocessing scrap, flash and turnings into semi finished bars. Designed for users who produce at least two

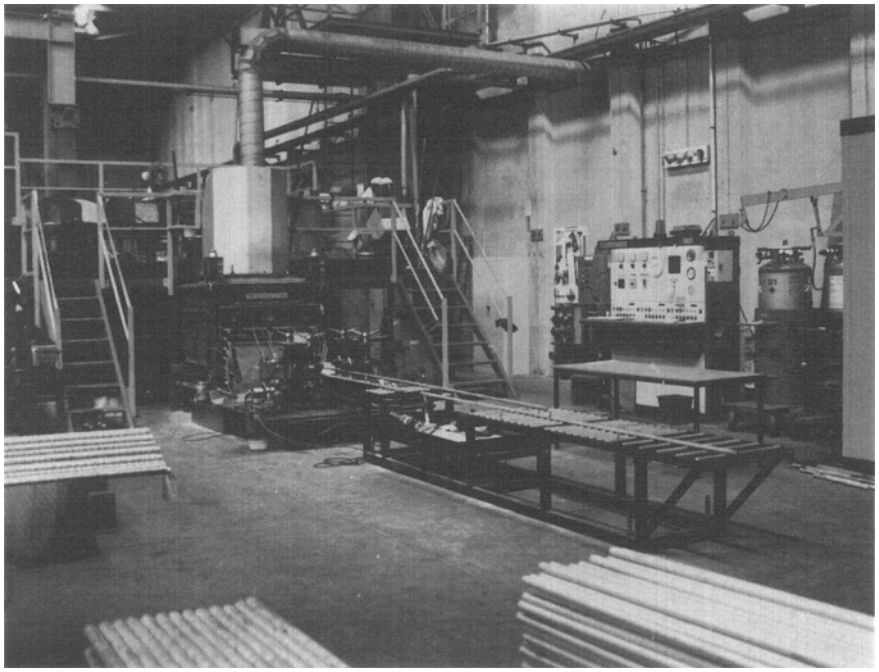


Rautomead USA

million lbs./yr., depending upon alloy composition, these machines let them reduce inventory levels and optimize forging and processing operations. The machine can produce up to 12 strands of copper-based redraw and forging rod. Rapid die changes are permitted by an optional metal valve that stops hot metal flow to the die.

Circle No. 33 on reader service card.

Cindol TR 4047-B, ***a specialized coolant,*** is now available from **E.F. Houghton & Co.,** Valley Forge, Pennsylvania. ***Recommended for applications including turning, drilling, tapping and broaching,***



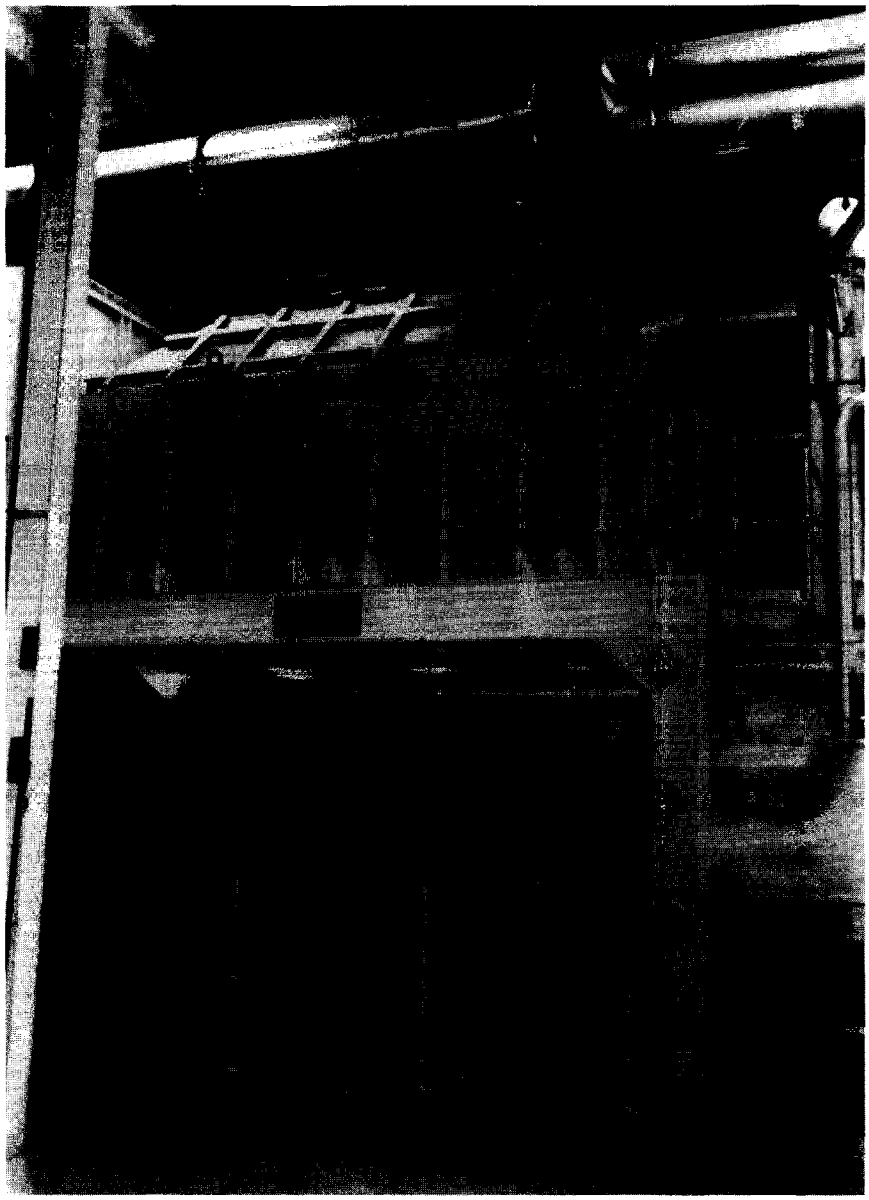
E.F. Houghton & Co.

it addresses the problems of reduced emulsion stability and decreased sump life associated with magnesium machine centers. It offers a special emulsifer package designed to function even when magnesium fines build up to intolerable levels. The potent additive, ND, dramatically lowers the coefficient of friction between metal surfaces, resulting in longer tool life, improved surface finish and production rates. Clean running, the fluid drops fines quickly, preventing dirt and swarf build-up on machine tools.

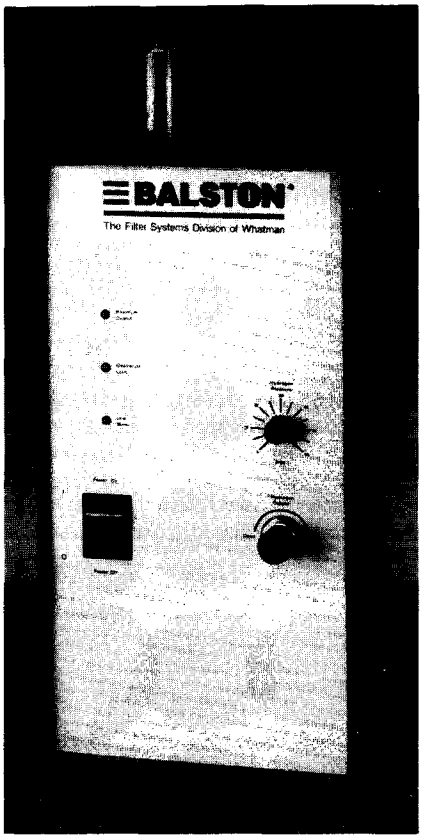
Circle No. 34 on reader service card.

A new ***gas-fired thermal sand reclamation system for foundries, designed for maximum efficiency and minimum maintenance,*** has been introduced by **Simplicity Engineering, Inc.,** Durand, Michigan. The design provides self-supervising automatic operation and features a proprietary design that significantly increases the thermal efficiency of the system and minimizes stack emissions. Sand to be reclaimed is fed into the furnace section, which is a multi-zone fluidized bed. The number of zones depends upon the size of the unit. Each zone is independently controlled to provide an accurate temperature and the required retention of the sand. Fluidizing keeps the sand well mixed to prevent cold spots and incomplete thermal cleansing. The sand is retained in the furnace a sufficient time to ensure that all resins are burned off. Then the hot sand passes through an indirect heat exchanger which transfers heat from the sand back to the furnace's fluidizing air. This energy recuperation is one of the major features that contributes to the system's high thermal efficiency and low operating costs.

Circle No. 35 on reader service card.



Simplicity Engineering, Inc.



Balston Inc.

Eliminate expensive, high-pressure hydrogen gas cylinders with a new, compact Hydrogen Gas Generator now available from **Balston Inc.,** Haverhill, Massachusetts. Hydrogen is produced in the generator by electrolytic dissociation of water. The resultant hydrogen stream then passes through palladium membranes. Since only hydrogen or its isotopes can penetrate the palladium membranes, the purity of the output gas is the highest purity ever available from a benchtop gas generator—99.99999% pure. The ***generators offer special features to ensure safe and convenient operation, such as low-water, over pressure, and electrolyte leak detection.***

Circle No. 36 on reader service card.

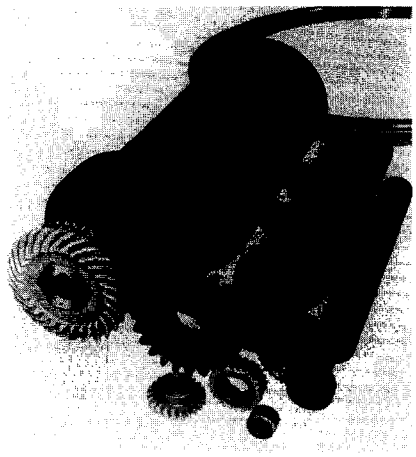
The popular ***Inverted Pin Router*** from **C.R. Onsrud, Inc.,** Troutman, North Carolina, ***has been adapted for use in fabricating plastics*** such as acrylic, LEXAN®, Teflon, acetal, UHMW, nylon, cast acrylic and other thermoplastics as well as thermoset. Fabricators who machine plastics can now enjoy the versatility, performance, and ease of operation that has made the Onsrud 36210 Series the favorite of the woodcutting and wood crafting professionals. The cutter enters the material from underneath, while the pattern and guide pin are on top in full view of the operator. The inverted router offers many safety advantages and speed features including an under-the-table vacuum for dust and chip removal that keeps residue out of the way between cutter and material.

Circle No. 37 on reader service card.

A new, high-speed, stable, bright electroless nickel process has been introduced by **Enthone-OMI Inc.,** West Haven, Connecticut. ***ENPLATE® Ni-434 combines a fast plating rate and superior brightness needed for production applications*** with excellent asplated hardness and wear resistance needed for engineering applications. It is a low-to-medium phosphorus content (5-7% P) process and is recommended for applications where process speed and low per/unit cost are desired.

Circle No. 38 on reader service card.

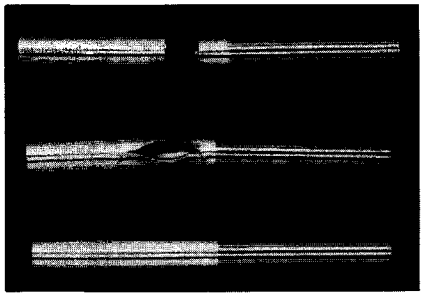
The ***one-piece Power-Core™ made of a composite gear material*** from **Intech Corp.,** Closter, New Jersey, easily absorbs vibration and noise caused by the frequent or sudden stop-and-go action typically found in metal die cutting, milling, and other shock loading operations which often causes metal gears to suffer from premature fatigue failure. The gears feature an internal steel hex securely cast into composite material. Shock loads are easily absorbed by the composite material with unique crystalline structure to reduce vibration, wear, misalignment and noise. Torque is conveyed through the steel hex to the composite material. The metal/metal connection securely fastens the gear to the shaft to maintain an even distribution of force through the composite material, thus minimizing the possibility of incurring stress risers resulting from shock loading.



Intech Corp.

Circle No. 39 on reader service card.

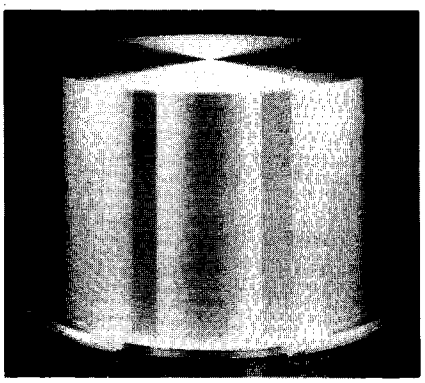
Custom-engineered transition joints that let designers integrate exotic metals with standard plumbing for aerospace, aviation, cryogenic, chemical, nuclear power, and vacuum applications are available from **Nuclear Metals, Inc.** of Concord, Massachusetts. The Bimetallic Transition Joints combine dissimilar metals which are metallurgically joined to provide a bond that is stronger than the weaker metal. Fabricated from metals such as stainless steel and aluminum, stainless steel and titanium, and Inconel alloys and zirconium, configurations include end-to-end, clad, and lined components.



Nuclear Metals, Inc.

Circle No. 40 on reader service card.

Tosoh SMD, Grove City, Ohio, has developed ALTO, ***a patented, all-aluminum target for the Varian Quantum system that increases target life,*** thus reducing the cost of ownership. Rather than bonding the target, it is welded to an aluminum backing plate. This process creates a highly stable assembly with optimized crystallography. In addition, computer simulations are used to enhance film quality by optimizing characteristics such as grain orientation, alloy distribution and phase, and grain size. One-third the weight of solder-bonded targets, ALTO is easier to load and unload. It achieves higher deposition rates because it can operate at higher power levels than copper-backed targets.



Tosoh SMD

Circle No. 41 on reader service card.

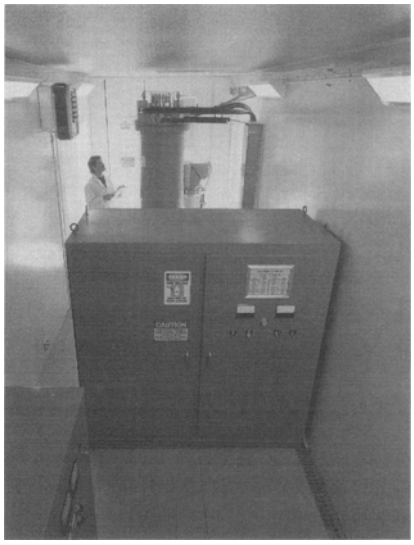
Tencor Instruments, Mountain View, California, has introduced the Surfscan 7500, ***the latest model in its line of laser-based defect inspection systems for patterened semiconductor wafers.*** The new system significantly enhances performance for in-line process control applications, especially for measurements on metal layers and rough blanket films which are critical in the production of advanced devices. A combination of new optical and signal processing techniques results in improved sensitivity and defect capture rate. The overall signal-to-noise ratio of defects on patterned wafers has been improved by up to 50 times, significantly reducing the amount of background signal collected from the pattern. Thus, the signal from defects can be more clearly detected.

Circle No. 42 on reader service card.

Varian Assoc., Inc., Palo Alto, California, has introduced ***a new flame ionization detector flame tip design*** that eliminates tailing problems in non-high temperature analyses, particularly when analyzing polar samples and high molecular weight hydrocarbons. The flame tip is manufactured from high-technology ceramic material, and is capped with a metal collar to provide the polarizing field. The FID is designed so that a sample never comes in contact with the hot metal, and thermionic emission reduces baseline noise to improve the reliability of results.

Circle No. 43 on reader service card.

A new device using superconductor technology could save U.S. industries up to $26 billion lost annually to electrical power disruptions. The Superconducting

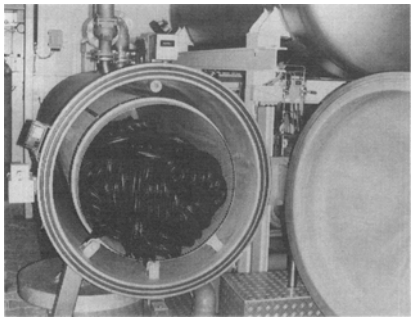


Superconductivity, Inc.

Storage Device™—SSD—built by **Superconductivity, Inc.,** Madison, Wisconsin, allows critical manufacturing processes to "ride through" power sags and momentary outages as short as 100 msec by instantly supplying megawatts of extra power. The ***SSD represents the first commercial use of a superconductor for power applications.***

Circle No. 44 on reader service card.

The development of ***automated fluorine treatment systems for the plastics, automotive, electronics and toy industries,*** is announced by **FluoroTec, Inc.,** Menomonee Falls, Wisconsin. These systems increase the surface tension of polyolefin, ethylene propylene rubbers and a variety of engineered plastics to allow consistent coating, marking, flocking or other decorative processes. In addition, these systems can treat plastic containers to significantly reduce permeation of volatile fluids or gases. Fluorine treatment can be used in batch system production, but continuous process systems are also available for most applications. Systems are custom made for each application from pre-engineered modular components. Modular elements include a variety of control panels, treatment chambers, mixing chambers, drying and catalytic chambers. Modular concepts allow for reduced cost and faster delivery.



FluoroTec, Inc.

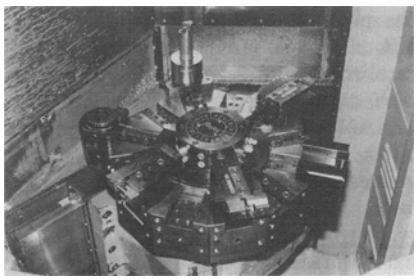
Circle No. 45 on reader service card.

A new ***hot melt adhesive applicator combining light weight and high output*** is available from **Hysol Engineering Adhesives,** Seabrook, New Hampshire. The Maximatic 2700 applicator weighs less than two lbs. fully loaded and delivers up to five lbs. of adhesive per hour. It is an economical, high-performance gun for industrial applications that is designed for continuous-duty use in carton closing, foam fabricating, woodworking, product assembly, and general purpose applications. The standard nozzle features a ball-check valve for quick glue cut-off, and a teflon coating on the internals reduces friction and adhesion. The advanced housing design improves heat transfer and prevents cold glue from reaching the nozzle. A full-length trigger enables the operator to use all four fingers for "ease of squeeze."

Hysol Engineering Adhesives

Circle No. 46 on reader service card.

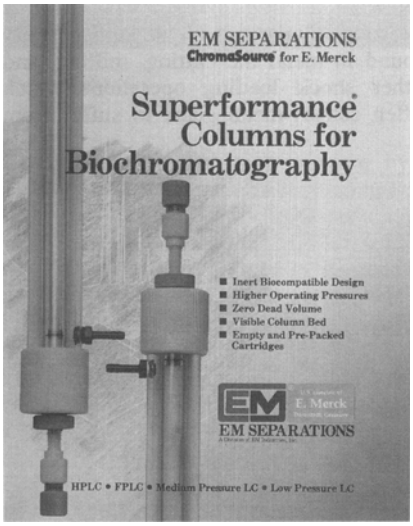
Saeilo Machinery, Long Island City, New York, presents ***FLOJET, the high performance cryogenic coolant system.*** It is an advanced cutting system that mixes the existing water-based cutting fluid of a CNC lathe with liquid CO_2 in a high pressure stream. The mixture is directed at the cutting edge of the tool insert at a ballistic velocity and ultra-low temperatures. This combination of high pressure and low temperature shatters chips into small curls, removes heat from the cutting zone and delivers a variety of remarkable performance benefits: the elimination of "bird nesting" of dangerous chips; total chip control; shorter cycle times with increased throughput; improved accuracy; extended tool life; reduced horsepower requirements of the machine; improved surface finish.



Saeilo Machinery

Circle No. 47 on reader service card.

The ***Superformance® glass columns,*** from **EM Separations,** Gibbstown, New Jersey, are ***produced to precision tolerances and are able to withstand high pressures.*** Higher operating pressures permit the use of high resolution materials which can provide increased flow rates resulting in faster separations and shorter retention times. The columns are designed to be used with EM's prepacked cartridges available in a variety of solvents, or users can pack their own column with the media and bed height of their choice. The column's inert design protects sensitive samples, and the glass cartridge system offers flexibility and easy handling. Void-free adaptors eliminate dead volume to provide better separations with no band spreading.



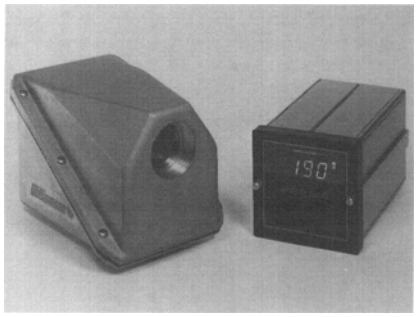
EM Separations

Circle No. 48 on reader service card.

A new specially developed ***in-situ elipsometer plays a major role in the evolving In-Line Sputtering System for magneto-optical memory discs*** from **Materials Research Corp.,** Orangeburg, New York. To measure the thickness and index of refraction of sputtered silicon nitride films that are part of the MO discs, MRC has developed its in-situ elipsometry on polycarbonate and silicon wafers. This technology has subsequently been applied to other films including ultrathin mirror stacks. Two challenges faced the research team: measuring the sample without touching it, and limiting refraction measurement to the front of the transparent disk, since light gets refracted from both sides. The final product obtains highly repeatable measurements of thickness and index of refraction through use of a laser source, polarizer, analyzer and detector.

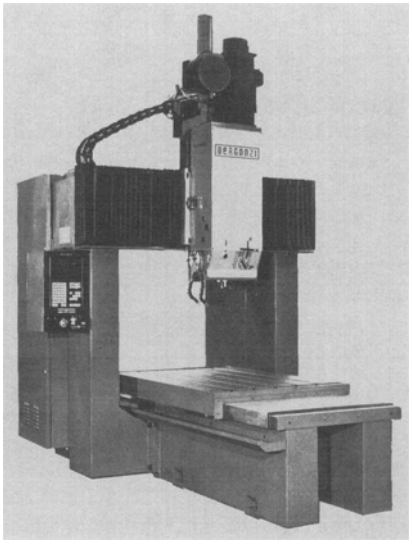
Circle No. 49 on reader service card.

The new TEMPMATIC 4300 from **Williamson Corp.,** Concord, Massachusetts, is a ***high-performance, noncontact temperature measuring system*** designed to measure thin plastic films as well as opaque materials. The system is used in plastic film processing, printing, coating, calendering, laminating and thermoforming. Accurate product temperature control optimizes throughput and improves quality. It has the unique characteristic of looking at common polymers where they are opaque. It features a rugged, compact sensor protected in a watertight, dust-tight enclosure for hostile environments, utilizes auto null balancing circuitry for drift-free operation, and has visual aiming for precise alignment on the target area.



Williamson Corp.

Circle No. 50 on reader service card.

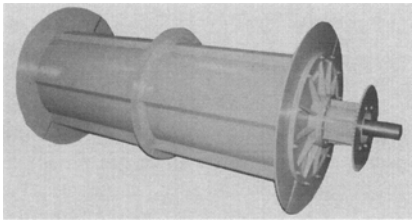


Willis Machinery and Tools Co.

Willis Machinery and Tools Co., Toledo, Ohio, announces the introduction of a ***bridge-type CNC machining center with large X and Y axis travels for machining large parts.*** It is particularly suited for such applications as tube sheets for heat exchangers, machinery frames, valves, dies, and flanges. The unit is made from cast iron with the square columns, arm, and base being heavily ribbed to maximize rigidity. The guideways are machined from solid—induction hardened and ground—with turcite surfaces. Adjustable gibs provide continual rigidity of the head, table, and carriage. These properties, plus a boring mill type spindle, rather than a quill feed spindle, enable milling operations as well as drilling using carbide insert tools, and other machining operations requiring rigidity. Drilling and tapping are primary machining operations.

Circle No. 51 on reader service card.

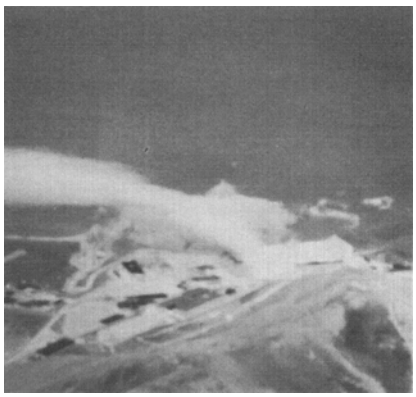
Custom-engineered electromagnetic drums for high-volume ferrous metal separation, mining, scrap, beneficiation, and process control applications are being introduced by **O.S. Walker Co.,** Inc., Worcester, Massachusetts. The drums feature magnetic coils produced with copper conductors. The Walker radial pole design concentrates the deepest field intensity at the center of the drum's surface where the burden is deepest and heaviest. Simple to install and self-cleaning, the drums are used for tramp iron removal, iron reclamation from car shredders, slag, foundry sand, concentration of magnetic ores, and purification.



O.S. Walker Co., Inc.

Circle No. 52 on reader service card.

For applications that require affordable, high-performance infrared imaging, **Amber Engineering,** Santa Barbara, California, has introduced RADIANCE I, a ***portable infrared camera.*** It is designed to be used in a wide range of applications including surveillance, predicted maintenance, process control, and materials evaluation. The RADIANCE weighs less than five pounds and is designed to operate conveniently both in the field and in industrial environments. It features a self-contained, Sterling closed-cycle cooler and operates from any standard external 12-volt power supply. It is simple to use; the only operator controls are power, calibration, contrast, and brightness.



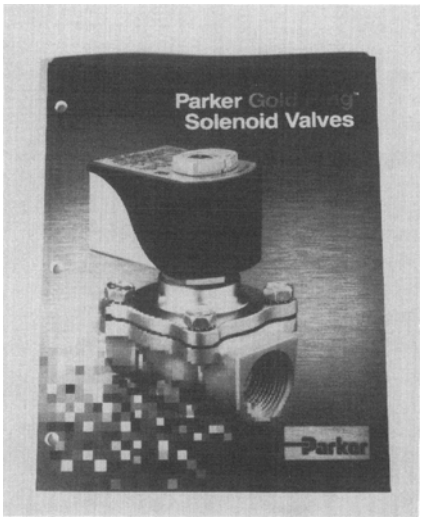
Amber Engineering

Circle No. 53 on reader service card.

Do you have literature or news you'd like highlighted in this feature? Send your contributions to Technical Journals Managing Editor, ASM International, Materials Park, OH 44073-0002.

LITERATURE/DATA SOURCES

A new 90-pg. comprehensive ***catalog describing the Gold Ring line of solenoid valves,*** with detailed information about the construction and operation of the valves, their features and engineering data, is now available from **Parker Hannifin Corp. Fluidex Div.,** Broadview, Illinois. In the final section on engineering and information, the subject of valve sizing is reviewed, using flow formulae and flow curves. It also includes sample problems and charts for specific gravity for liquids and gases as well as a saturated steam temperature table. A troubleshooting check list and glossary of terms complete the catalog.



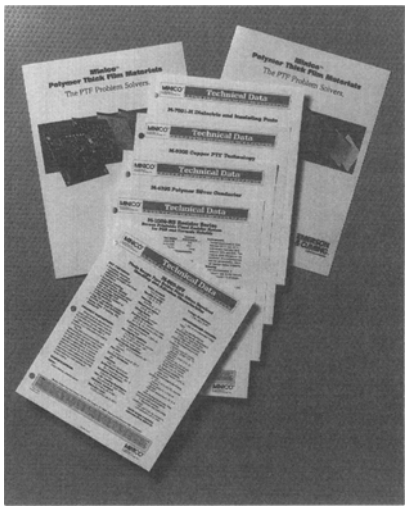
Parker Hannifin Corp.

Circle No. 54 on reader service card.

"Lost Foam...The Future of Casting Design," is a new 8-pg. brochure offered by **Foseco-Morval, Inc.,** Kitchener, Ontario, CANADA. It explains how the Evaporative Pattern Casting process produces the finest value-added castings ever made by any process. The technology not only offers net or near net shape casting and exceptional surface qualty, it opens up many ***new casting design features not possible with other casting methods.*** The significant advantages of F-M's ventless molding methods of producing patterns is compared with standard and vacuum-venting methods with regard to the quality of molding bead fusion, casting surface finish, shrinkage, dimensional control and finished casting coasts. Tight tolerances as-cast are achievable; heavy wall sections can be reduced because draft can be eliminated in many applications; complex drilling can also be eliminated because holes can be cut to any depth and only require tapping; undercuts and backdrafts are possible. The technique also permits a high degree of component integration into the base casting.

Circle No. 55 on reader service card.

Minico, Inc., Congers, New York, a subsidiary of Emerson & Cuming, Inc., offers ***data sheets detailing the key features and specifications*** of each of its polymer-based resistive, dielectric, conductive, and solderable conductive polymer thin film (PTF) inks. Applications for these inks include a variety of PTF circuitry and polymer multilayer circuits in military, aerospace, telecommnications and consumer electronics.

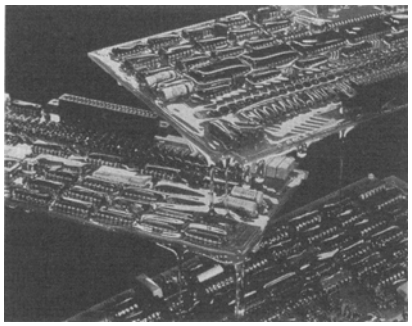


Minico, Inc.

Circle No. 56 on reader service card.

A ***newly revised application selector guide*** on UV curable adhesive, sealant, coating, potting, and encapsulating compounds is offered by **Master Bond, Inc.,** Hackensack, New Jersey. Over 30 different one-component compositions are listed and described. Data is presented on color, viscosity, service temperature range, and storage stability of each grade, together with application recommendations.

Circle No. 57 on reader service card.



Emerson & Cuming, Inc.

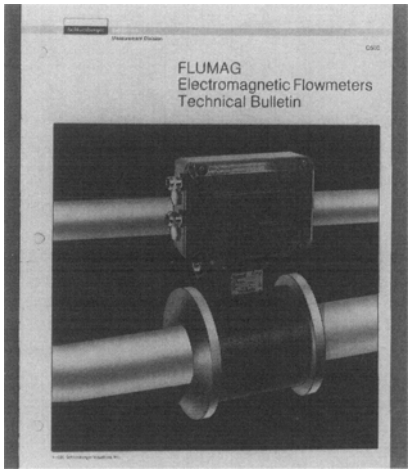
A ***Selector Guide for its 100% solids UNI-COAT® conformal coating products line*** is available from **Emerson & Cuming, Inc.,** Woburn, Massachusetts, a W.R. Grace company. It features comprehensive selection of one-component, solventless, low-viscosity, low-stress urethane, silicone and acrylate conformal coatings that feature outstanding environmental protection for printed circuit boards and electronic components. The coatings are applied by dip, spray, flood, brush or screen methods.

Circle No. 58 on reader service card.

The ***Second Edition, revised, "Primer on Composite Materials Analysis"*** by John C. Halpin, **Air Force Materials Center, WPAFB, Materials Research Laboratory, Washington University,** St. Louis, Missouri, has been published by Technomic Publishing Co., Lancaster, Pennsylvania. It covers both quantitative and qualitative analysis of advanced composites and is directly primarily to those who lack a prior familiarity with composition analysis; however, many of the topics in this revised version have been developed to a higher degree of sophistication, thereby providing a worthwhile source of information for the researcher who is already acquainted with this field.

Circle No. 59 on reader service card.

Schlumberger Industries Measurement Div., Greenwood, South Carolina, offers an 8-pg., ***full-color technical bulletin (#C500) on its line of Type FM FLUMAN™ Electromagnetic Flowmeters.*** The bulletin presents information on operating principles, performance, applications, operating parameters, specifications, flow rates, and dimensions. Type FM FLUMAGs offer outstanding performance with difficult-to-handle liq-



Schlumberger Industries Measurement Div.

uids: slurries, abrasive or corrosive liquids, and high-temperature fluids.

Circle No. 60 on reader service card.

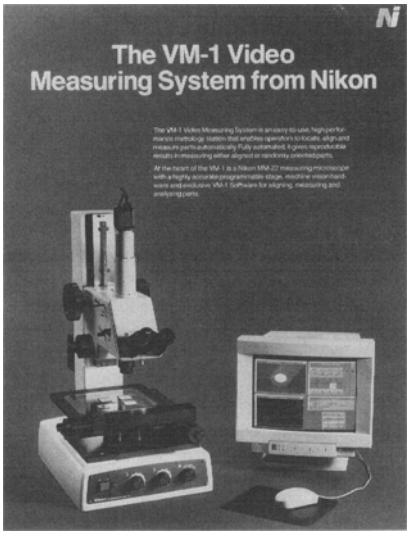
The **American Welding Society,** Miami, Florida, has published the ***fifth revision of "Specification for Tungsten and Tungsten Alloy Electrodes for Arc Welding and Cutting."*** The specification, an American National Standard, introduces requirements for rare earth-modified, nonconsumable electrodes. In addition, it specifies standard sizes, finish, lengths, quantities, production identification, color coding, and chemical composition limits. It is three-hold punched and softbound.

Circle No. 61 on reader service card.

Information is presented on ***springs for all kinds of machinery*** in a new 4-pg. brochure now available from **Alfred and William, Inc.,** Union, New Jersey. Illustrated with drawings and photos, the flyer includes compression, extension, torsion and flat springs, stampings, wire forms and rings. A purchasing guide and sections on materials and finishes are also included.

Circle No. 62 on reader service card.

A glossy, ***full-color brochure on the VM-1 video measuring system*** is now available from **Nikon, Inc.,** Melville, New York. Lavishly illustrated, the 4-pg. piece details the capabilities of the easy-to-use, high-performance measuring system that enables operators to locate, align, and measure parts automatically. It gives reproducible measurements for either aligned or randomly oriented parts. The heart of the system is the Nikon MM-22 measuring microscope with highly accurate programmable stage, machine vision



Nikon, Inc.

hardware, and the exclusive VM-1 software for measuring and analyzing parts.

Circle No. 63 on reader service card.

Pace, Inc., Laurel, Maryland, announces the release of a new ***brochure featuring the Mini-1 Fume Extractor Kit,*** which eliminates hazardous fumes from the workplace. The Mini-1 is easily portable and perfectly suited for service departments, mobile repair operations and virtually any facility requiring low-cost, single-station fume extraction.

Circle No. 64 on reader service card.

The new silanes-silicones commercial products catalog is available from **Huls America Inc.,** Piscataway, New Jersey. It serves as a ***reference guide to typical properties and purities of Hüls silanes and silicones.*** Applications for these products include coupling agents, intermediates, monomers, blocking agents, release agents, lubricants, primers, and reducing agents.

Circle No. 65 on reader service card.

A ***videotape*** is now available ***on the Hydrawedge Hot Deformation Simulator*** developed by **Duffers Scientific, Inc.,** Poestenkill, New York. The Hydrawedge System was created to physically replicate the entire hot rolling process—from heat-up through multiple-stand rolling to cool-down—on a laboratory scale.

Circle No. 66 on reader service card.

A new ***product fact sheet on TURBO® Select ultra-bright, high-leveling nickel process*** is available from **Enthone-OMI Inc.,** West Haven, Connecticut. It contains product features, end-user benefits, applications, and other product characteristics. Turbo Select is specifically formulated for manufacturers requiring the ultimate in brightness and leveling in applications which call for thin nickel coatings. It provides superior reflectivity without sacrificing adhesion, ductility, and chrome receptivity and works well in both rack and barrel applications.

Circle No. 67 on reader service card.

Graco Inc., Minneapolis, Minnesota, offers the professional finisher a ***free information kit that describes the challenges faced when using waterbased coatings.*** The complete kit includes a "Ready for Waterbase" video, a technical essay on waterbase production issues, a graphic comparison of passivated and unpassivated stainless steel, and a brochure featuring Graco's paint circulation system capabilities.

Graco Inc.

Circle No. 68 on reader service card.

A ***comprehensive quick-reference industrial and marine fittings catalog*** has been released by **Nicro Corp.,** San Leandro, California. It features Nicro's extensive line of lightweight, sturdy and non-corrosive industrial hardware. The concise 6-pg. catalog contains a brief overview of Nicro's pin and snap shackles, industrial snaps, swivels, welded rings, and plastic rope thimbles. An easy-to-read description of each item includes exact specifications, materials, and application.

Circle No. 69 on reader service card.

A ***free newsletter, entitled "Instron World"*** has been introduced by **Instron Corp.,** Canton, Massachusetts. It presents materials testing technology and covers the newest developments in materials testing applications, equipment, and software.

Sections on the latest testing accessories and training news are also included.

Circle No. 70 on reader service card.

The ***design, processing and production standards employed to assure quality and long life in its crucibles and ladle liners*** are described in new literature available from **Engineered Ceramics,** Gilberts, Illinois. In addition, the brochure presents dimensional data on more than 30 representative sizes of its HYcor® alumina crucibles and similar information on its ladle liners.

Circle No. 71 on reader service card.

Varian Assoc., Inc., Palo Alto, California, has become the first in the semiconductor equipment industry to offer customers access to an ***on-line,*** (T)wenty-four (H)our (I)ntelligent (N)etwor(K)—THINK—for ***expert troubleshooting advice on the company's 3000-series sputtering systems.*** Available by subscription, the expert system puts the combined expertise of the company's most experienced field engineers at customers' fingertips around the clock, around the world, 365 days a year.

Circle No. 72 on reader service card.

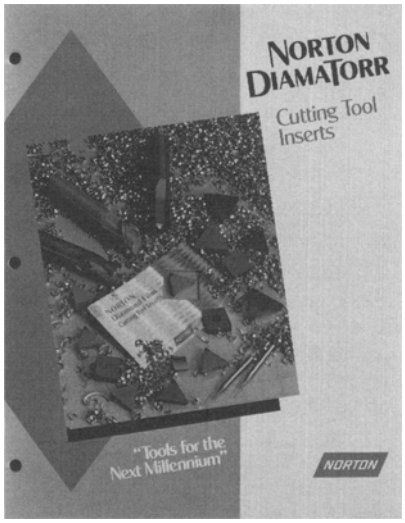
A ***free reprint of the paper "Low-Temperature Scanning Electron Microscopy: Advantages and Applications"*** is available from the **Electron Optics Div., of Carl Zeiss, Inc.,** Thornwood, New York. The paper, by J.A. Sargent, Oxford Instruments, Madison, Wisconsin, discusses how cryopreparation stabilizes low melting point materials, minimizes volume changes, and reveals internal structure by freeze-fracture. Unlike other biopreparation procedures, cryospecimens remain fully hydrated, chemical fixation is avoided, specimens are not immersed in solvents, and elements are not lost or substantially moved prior to X-ray analysis. Information about possible future cryo workshops is included.

Circle 73 on reader service card.

"Introduction to Statistical Process Control," an authoritative primer for quality control and operating personnel, is available as a written course from **ASM International®,** Materials Park, Ohio. The 12-lession course includes basic nomenclature, variation, data collection and sampling, process control charts, and problem-solving tools. Participants will be exposed to an introductory course of study in widely accepted statistical techniques for process and quality control methods used in many industrial applications.

Circle No. 74 on reader service card.

A new ***catalog containing comprehensive information on DiamaTorr™ cutting tool inserts*** and other advanced tooling capabilities is now available from **Norton Diamond Film,** Northboro, Massachusetts. The diamond film inserts are made using a proprietary chemical vapor deposition process. CVD diamond tools offer better wear resistance and higher temperature capability than polycrystalline diamond tools.

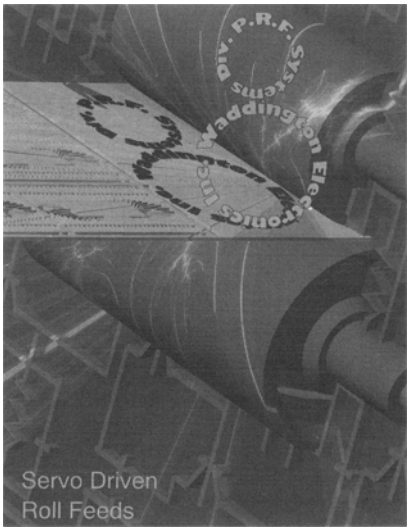


Norton Diamond Film

Circle No. 75 on reader service card.

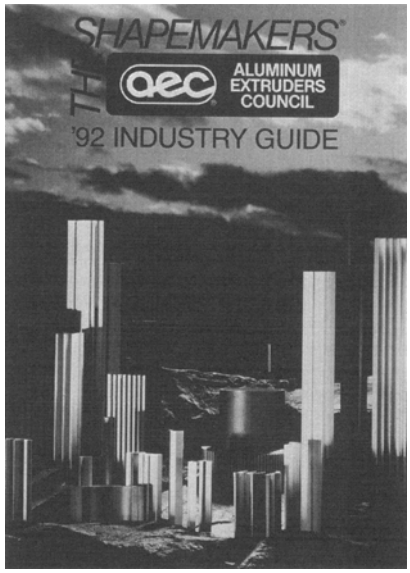
Waddington Electronics, Inc., Cranston, Rhode Island, is offering a ***new 24-pg. brochure describing a full line of roll feeds*** from 3 to 48 inches wide, a broad range of accessories, and loop controls for new and retrofit applications. It describes the full line of feeds and standard features that include closed-loop brushless resolver feedback, sealed bearings, a zero-backlash drive train, and quick indexing. A technical description and specifications are provided for each feed, along with special capabilities and available options. Also included are a technical brief, quality control analysis, description of programming options and an illustration of a fully integrated, flexible manufacturing cell. Loop control systems are also featured along with a handy "request for quotation" fax form.

Circle No. 76 on reader service card.



Waddington Electronics, Inc.

The **Aluminum Extruders Council,** Wauconda, Illinois, announces the availability of its ***free aluminum extrusion 1992 Industry Guide.*** The updated reference contains a complete alphabetical directory showing each members company's headquarters, plants and press sizes, as well as a geographical listing of plants by state or province. Detailed capability charts indicate data such as maximum circle size of extrusion presses, forms produced, finishing and fabricating services available, and special services and forms.



Aluminum Extruders Council

Circle No. 77 on reader service card.

General Magnaplate Corp.

"Synergistic" enhancement coatings that create a super-hard, permanently dry-lubricated surface on heat sealing equipment parts are described in a new product sheet from **General Magnaplate Corp.,** Linden, New Jersey. The coatings are claimed to outperform and outlast conventional treatments such as "non-stick" tapes and chrome plating. They not only protect parts against wear, abrasion and corrosion—they also eliminate the need for repeated application of "non-stick" tapes which wear out rapidly and frequently become messy. The dry-lubricated Magnaplate-applied surfaces prevent plastic and other materials from adhering or bonding to surfaces and facilitate clean-up and sanitary maintenance. The coatings are chrome-free and environmentally safe, improve wear resistance, enhance release properties and resist corrosive attack from chemicals.

Circle No. 78 on reader service card.

Ain Plastics, Inc., Mount Vernon, New York, has released its ***new 1992-1993 catalog.*** The revised 184-pg. format offers full lines of mechanical plastics, sheet, rod, tube, film, and accessory items, required by those who use plastic. Many new products are introduced.

Circle No. 79 on reader service card.

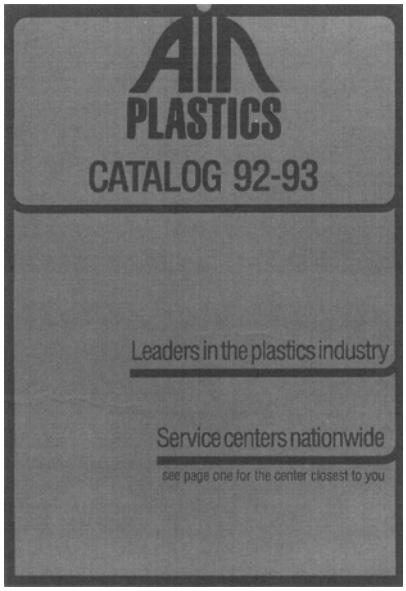
Cortest Laboratories, Inc., Cypress, Texas, announces the availability of its ***new corrosion troubleshooting program,*** "Corrosion Problem Solver." The program has been developed to provide assistance in identifying the root cause of common corrosion problems through information obtained from visual examination of the corroding components or equipment. It also provides basic remedial action that can be taken immediately to mitigate or reduce the severity of the problem. It is also a source of reference for the user about capabilities available at Cortest, and identifies the appropriate corrosion specialist(s) to be contacted for more information. It is intended as a supplement to the sound engineering judgment of the user.

Circle No. 80 on reader service card.

A world of information on the metallic magnesium industry is at your fingertips with ***the 1992 edition of the "International Magnesium Association's Buyers Guide"*** from the **International Magnesium Assoc.,** McLean, Virginia. This updated version is indispensable for purchasers of magnesium products and services worldwide, while it also serves as a hand reference tool for those within the industry. It is sub-categorized for easy reference, and provides product and service information on magnesium producers, processors, fabricators, prototypers and marketers from 39 countries.

Circle No. 81 on readers service card.

A newly ***revised, 8-pg. brochure describes 20 different*** **Eriez Magnetics** ***equipment applications*** that have produced impressive results for their users. Ideas from the Erie, Pennsylvania, firm such as several ways ferrous contaminants can be automatically removed to protect machinery and improve product purity are included. It also features which types of vibratory equipment best move and meter dry bulk materials and how to use magnets to lift and convey.



Ain Plastics, Inc.

Circle No. 82 on reader service card.

"Advanced Cementitious Systems: Mechanisms and Properties," a new book from **Materials Research Society,** Pittsburgh, Pennsylvania, brings together the background experience and knowledge of many different disciplines to explore recent progress in this field. Topics discussed include pozzolanic and cementitious by-products; nuclear and hazardous waste immobilization; novel inorganic cements; novel experimental approaches; and cement-based materials for the infrastructure.

Circle No. 83 on reader service card.

New from **ASM International®,** Materials Park, Ohio, the ***"Principles of Failure Analysis" videocourse,*** is the most comprehensive, applications-oriented video training series ever produced for the metalworking industry on the subject of failure analysis. It can serve as a valuable tool for those who are new to the field, need a state-of-the-art update, or provide technical support in purchasing, sales, and administrative roles. General failure analysis is covered, as well as procedures and types of failures and stress, including ductile and brittle, fatigue, wear, corrosion and elevated temperature. The series contains 15 tapes.

Circle No. 84 on reader service card.

Technical proceedings from the 5th International Aluminum Extrusion Technology Seminar are now available from the **Aluminum Extruders Council,** Wauconda, Illinois. The complete, two-volume set Seminar Proceedings includes the unabridged versions of 155 technical papers and is a compilation of technological advancements, innovative ideas and industry research in the four major areas of the extrusion industry: billet; dies; extrusion process, equipment, and technology; and commercial issues.

Circle No. 85 on reader service card.

A 58-pg. booklet from **Eriez Magnetics,** Erie, Pennsylvania, describes how the company solved 278 processing problems with an assist from magnetic forces. The ***booklet charts actual problems encoun-***

tered by processing companies and the corresponding Eriez solution. It lists problem materials alphabetically—from "Abrasive Grain" to "Zirconia." Each problem cited occurred in a specific real-time industry. Each solution was a successful application of magnetic or vibratory forces to solve a particular problem.

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UNIVERSITY VIEW

A **high-temperature superconductor** developed by a research group headed by Hoi S. Kwok, **State University of New York, Buffalo,** New York, ***was launched aboard the 23 July U.S. space shuttle.*** The superconducting material, which was being tested for its durability in space and reaction to high-energy oxygen atoms in the low-earth orbit, is expected to be used in extremely sensitive cameras that take satellite pictures in the infrared wavelength. Materials currently used in IR cameras are made of semiconductors, but the new yttrium-barium-copper superconductor is potentially many times more sensitive.

Circle No. 87 on reader service card.

A ***molecular cluster growth process like none previously known*** has been described by a team of **Penn State** chemists led by Prof. Evan Pugh. The group discovered that tiny ball-shaped cages, the smallest and most stable hollow metal-carbon cluster known, grow by forming an interlocking multiball network rather than by forming a larger single ball. Made from just 20 metal and carbon atoms, the original metallo-carbohedrene molecule was discovered earlier this year. Now, the team has found networks made from two, three, and four interlocking molecules. The unusual growth process suggests unique and useful electronic properties.

Circle No. 88 on reader service card.

INTERNATIONAL RESEARCH CENTERS

A novel technique representing a major advance in measuring a crucial property of the new high-temperature superconducting materials has been developed at **Sandia National Laboratories,** Albuquerque, New Mexico. The technique, which features many advantages over present methods of measurement, ***measures the surface resistance without coming into contact with the sample.*** It can be used on complex shapes and can spatially scan the sample to provide a two-dimensional image of the surface resistance. The device is called a confocal resonator and employs a resonant cavity formed between a spherical mirror and the conducting sample. When the structure is in resonance, a standing electromagnetic wave exists, and its properties are strongly affected by the detailed dielectric and conductive properties of the material in its path. The characteristics of this standing wave are then used to deduce the sample's surface resistance.

Circle No. 89 on reader service card.

A ***joint research project aimed at manufacturing practical lengths of wire from high-temperature superconductors*** has been announced by **Intermagnetics General Corp.,** Guilderland, New York, in cooperation with **Argonne National Laboratory,** Argonne, Illinois. The wire will be made using a method which, in tests by IGC and Argonne, produced the highest current density (a measure of current-carrying ability) ever recorded for a short length of high-temperature superconducting wire made in the U.S. The wire will use superconducting powders of bismuth-strontium-copper oxide encased in a silver tube, which IGC will extrude into single-and multiple-core wires.

Circle No. 90 on reader service card.

An international group of 11 lead producers and four battery companies announce the formation of the **Advanced Lead-Acid Battery Consortium,** Research Triangle Park, North Carolina, to ***research and develop advanced lead-acid batteries,*** primarily for electric vehicles. The consortium was formed in response to the increasing governmental demand for pollution-free vehicles in the U.S. It plans to improve significantly upon existing lead-acid battery technology with a comprehensive product research and development plan, managed by the International Lead Zinc Research Organization Inc. (ILZRO). Lead-acid batteries are recyclable and virtually emission-free. They are relatively inexpensive when compared to other battery systems and are free from safety concerns.

Circle No. 91 on reader service card.

A three-year project, led by the **Centre for Adhesive Technology, (CAT),** Cambridge, England, to develop improved quality assurance systems for adhesive bonding technology was recently instituted. Adhesives in manufacturing are not being fully exploited by industry. This is due to a lack of confidence arising from the perceived variability of joint quality during manufacturing. Through the analysis of manufacturing processes supplied by industrial sponsors, areas of uncertainty will be established and quality management tools and techniques developed to reduce variability. The findings will be compiled to form a ***standard approach to quality management for adhesive technology.*** Cooperating projects exist in France, The Netherlands, and Scandinavia.

Circle No. 92 on reader service card.

Sandblasting grit that was once headed for the hazardous landfill can now be used to pave highways. Researchers at **Battelle Laboratories,** Columbus, Ohio, have demonstrated a ***process that allows the grit to be mixed with asphalt,*** safely encapsulating the heavy-metal residue left over from sandblasting Navy ships and submarines, and saving valuable landfill space. Although the grit is categorized as a hazardous material under certain regional laws because it contains flakes of paint (which often contain heavy metals such as lead) it actually contains trace amounts only slightly higher than that found occurring naturally in the soil. The metal content of the resulting asphalt is in compliance with environmental regulations.

Circle No. 93 on reader service card.

Two steel producer organizations from former East European centrally planned economies have been elected **Affiliated Members of the International Iron and Steel Institute,** Brussels, Belgium. They are the ***Association of Iron and Steel Producers in the Czech and Slovak Federal Republic*** and the ***Association of the Hungarian Steel Industry.*** They are the first East European organizations to join the Institute with exception of the Yugoslav Iron and Steel Federation, which has participated in Institute activities since 1975. Participation in IISI is expected to help steelmakers in both countries restructure and modernize their industries. Membership will also be extended to producer organizations in other East European countries and in the former Soviet Union as economic restructuring in these countries moves ahead.

Circle No. 94 on reader service card.

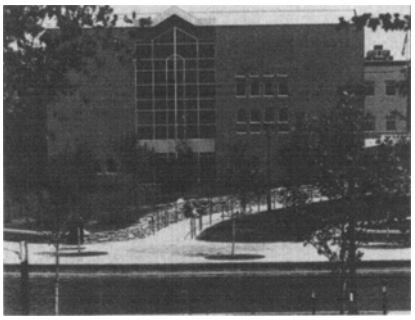
The G-2 Committee on Wear and Erosion of the **American Society for Testing and Materials,** Philadelphia, Pennsylvania, is ***seeking participants for standards development activities on computerization in wear and erosion.*** A subcommittee is currently working on methods for calculating wear volumes; standards on precision assessment and descriptions concerned with inter-laboratory test data; and on database format for sliding wear. Future standards development plans include activities in computerization of wear test equipment and databases in all forms of wear and erosion. All interested parties are invited to participate.

Circle No. 95 on reader service card.

Aluminum implanted with a thin layer of oxygen ions produces an alloy about five times stronger than today's high-strength aerospace aluminum alloys, according to researchers at **Sandia National Laboratories,** Albuquerque, New Mexico. The new alloy also has greater resistance to friction and wear than other aluminum alloys and retains its strength superiority even when subjected to high temperatures. It's produced by implanting oxygen concentrations as low as five atomic percent in the surface of aluminum, which makes it five times more resistant to wear than pure aluminum. Strengths as high as 2.9 gigapascals (GPa) have been measured in treated aluminum disks at room temperature, which exceed that of hard steels.

Circle No. 96 on reader service card.

The **Electronics Manufacturing Productivity Facility,** Indianapolis, Indiana, ***assists manufacturers of commercial, as well as military electronics.*** As one of four national Centers of Excellence established by the U.S. Navy, the EMPF is capable of advancing the state-of-the-art in electronics and increasing productivity in electronics manufacturing. Over the past 12 months EMPF has dedicated well over 560 hours solving specific problems brought to its attention by military contractors and commercial companies with electronics manufacturing questions and problems. It offers free consultation and provides engineering support.



The Electronics Manufacturing Productivity Facility

Circle No. 97 on reader service card.

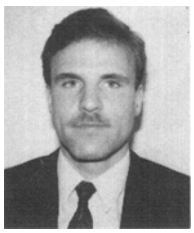
Proposals are solicited for carrying out short-term experimental studies that explore new applications for pulse combustion technology at the **Laboratory for Pulse Combustion Process** located at the School of Aerospace Engineering on the campus of Georgia Institute of Technology, Atlanta, GA. The lab is under the direction of the Gas Research Institute, Chicago, Illinois, and Georgia Tech. Work will concentrate on the study of novel, industrial uses for the acoustic energy supplied by pulse combustors. It has been shown that, under certain conditions, pulsations in a flow field significantly enhance heat, mass, and momentum transfer rates. Since these transfer properties control many industrial processes, pulse combustion is likely to significantly increase productivity and result in fuel savings in a number of energy-intensive processes. External proposals are now sought to test and evaluate new, practical industrial applications of pulse-combustion technology at the laboratory.

Circle No. 98 on reader service card.

KUDOS

Thomas R. Liebermann has been appointed Chairman of the Board of Directors of **Kaye Instruments, Inc.,** Bedford, Massachusetts, a major supplier of premium measurement systems. He is currently President and CEO. Prior to joining Kaye he was President of the Thermal Group of Thermal Scientific, specialists in thermal technology, polymers, and scientific instruments.

Andrew H. Nations, President and Chief Operating Officer of **Bearings and Drives, Inc., Macon, Georgia, has been elected President of the Bearings Specialists Association, replacing John Kisel whose term with the Glen Ellyn, Illinois society expired 30 April.**



Moco Thermal Industries, a Romulus, Michigan-based manufacturer of industrial ovens, dryers, regenerative thermal oxidizers, parts washers and powder coating equipment, has named ***Curtis B. Petterson*** as President. He was formerly Vice President-General Manager of Inductoheat of Madison Heights, Michigan.

Gary G. Teise has been named to serve as Engineering Representative for induction heating equipment for **Tocco, Inc.,** Boaz, Alabama. He was most recently Training Admininistrator for Tocco's in-house customer training schools. His background is in electronics with extensive experience in the application of induction equipment for heat treating, forge heating and related induction heating operations.

Viktor Hanuska, Director of Personnel, Michelin North America, Charlotte, North Carolina, assumed the position of Executive Vice President and General Manager, of **Michelin Aircraft Tire Corp.,** Charlotte, North Carolina, on 31 August 1992. He replaces Robert C. Ayers, with whom he will work in tandem during the next several months.

Laszlo Adler, professor of welding engineering and engineering mechanics, and

Glenn S. Daehn, professor of materials science and engineering, both of **The Ohio State University,** Columbus, Ohio, have each received the Lumley Engineering Research Award, named for OSU alumnus John H. Lumley, ceramic engineering, 1927. The award is intended to promote and enhance research within the college. Adler's areas of research interest include: ultrasonic wave propagation, characterization of diffusion and friction welds, evaluation of fiber/matrix interface quality in composite materials. Daehn has planned, proposed, and initiated 12 sponsored research projects during the past four years dealing with electrohydraulic forming of sheet metal, formability of metals in bulk forming, creep and dreep damage of austenitic stainless steel. He has also received the 1992 Hardy Gold Medal of TMS, a national award given annually to the most promising young engineer or scientist in the field of materials.

The Board of Director of **Lindberg Corp.,** Rosemont, Illinois has named ***Michael W. Nelson,*** Vice President, Central Region, and ***Roger J. Fabian,*** Vice President, Eastern Region. Each is responsible for Company operation within his respective geographical region.

David W. Dickinson, **The Ohio State University,** Columbus, Ohio, was elected President of the American Welding Society for 1992-93, effective 1 June. In 1985, Dickinson helped establish the Edison Welding Institute and served as its first director of research until 1987.

Materials and the Environment

In an effort to preserve and maintain the fragile ecology of our planet, these selected abstracts are presented to help readers of Journal of Materials Engineering and Performance stay current on legislation and compliance with global environmental issues and regulations. They are reprinted from Metals Abstracts and Materials Business File with permission from Materials Information, a joint service of ASM International®, Materials Park, Ohio, and The Institute of Materials, London, England.

January - June, 1992

Regulating Cadmium in the Work-Place-Some Observations on the Background and Current Position in Europe. (Retroactive Coverage). The background to and the current position of European Regulations related to Cd are briefly outlined. The clinical aspects are reviewed historically and an attempt is made to relate some of these with biological and environmental changes over the past 40 years. The information presented is based largely on alkaline (Ni-Cd) battery manufacture.

R. Adams. Cited: *Cadmium 89. Sixth International Cadmium Conference,* 1989, 43-46, [in English]. PHOTOCOPY ORDER NUMBER: 9205.

Wastewater Treatment. Federal metal finishing regulations that are applicable to all electroplating shops except independent printed circuit board shops and job shops are described. The most comprehensive and expensive pollution control law affecting metal finishers is reported to be the Resource Conservation and Recovery Act (RCRA). This law controls hazardous wastes from cradle to grave. Originally passed in 1976 the law was greatly expanded in 1984 to regulate small quantity generators. Fines for noncompliance can be up to $1 million. Systems which can be used to treat plating wastes and, thereby, meet standards set for waste water are reviewed. Guidelines which can be used to select an appropriate system for a specific application are given. Treatment systems described include both batch and continuous types. The chemistry of conventional treatment processes such as hexavalent chrome reduction, cyanide oxidation, and neutralization is detailed.

C.T. Philip. Cited: *Metal Finishing 90, (1A), (Guidebook and Directory),* 762-785, 1992, [in English]. ISSN: 0026-0576. PHOTOCOPY ORDER NUMBER: 9205.

Environmental Regulations and Paint Sludge Management Alternatives for Compliance. Proposed regulations by the US Environmental Protection Agency forced the automotive industry to seek alternatives to landfilling of paint sludge. To the benefit of the automotive industry the final regulations were relaxed and the disposal alternatives would be acceptable only if cost-effective. More effective dewatering of the paint sludge provides flexibility in the ultimate disposal and cost efficiencies.

G.P. Nassos. Cited: *Finishing West '90,* 1990, 13. Paper No. FC90-635, [in English]. PHOTOCOPY ORDER NUMBER: 9205.

Environment/Health/Safety. Federal laws, coupled with rules of the Environmental Protection Agency, regulate practically every actual and potential industrial and municipal pollution source. State and local laws and regulations place further restrictions on discharges to the air, water, and land. A review covers brief descriptions of the major federal environmental laws that affect foundries including: the Comprehensive Environmental Response, Compensation and Liability Act of 1980; Resource Conservation and Recovery Act; the Federal Water Pollution Control Act (Clean Water Act); Toxic Substances Control Act; Clean Air Act of 1990; storm water regulations; and liquid materials storage. Other issues addressed are the cost of solid waste, solid waste alternatives, worker health issues, higher OSHA penalties, and ergonomics.

Cited: *Foundry Management and Technology,* 119, (12), 1991, [in English]. ISSN: 0360-8999. PHOTOCOPY ORDER NUMBER: 9204.

How Environmental and Waste Disposal Issues Influence Formulation of [Forming] Lubricants. Hazardous waste characteristics include ignitability (flash point < 60 °C), corrosivity (pH > 12.5), reactivity (potential for forming harmful vapors or for explosion), and toxicity (capability to leach hazardous material into the water table). Chlorine in the form of chlorinated paraffin is a widely used extreme pressure lubricant additive. The Cl in the wax, under the heat and pressure of the forming or stamping operation, reacts with metal surfaces to form ir on chloride which acts as a physical barrier to prevent metal-to-metal contact. Chlorinated paraffin is not currently listed